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CONSTRAINTS PERCEIVED BY THE DAIRY FARMERS REGARDING IMPROVED DAIRY PRACTICES

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ABSTRACT

Dairy farming constitutes a vital component of India's agricultural economy, serving as a major source of income and nutritional security for millions of rural households. Despite its growing importance, the sector continues to face multiple constraints that limit the adoption of improved dairy practices. The present study was conducted to identify and analyze the key situational, personal, and economic constraints perceived by dairy farmers in Baramulla district of Jammu and Kashmir. A total of 120 dairy farmers were selected through multistage purposive and random sampling methods across three major veterinary blocks-Sopore, Baramulla, and Pattan. Data were collected using a well-structured interview schedule and analysed using descriptive statistics and t-tests to assess differences among constraint categories. The results revealed that shortage of green fodder during winter (70.00%) was the most severe situational constraint, while excessive stress due to dual responsibilities (80.00%) emerged as the leading personal constraint. Among economic factors, high cost of concentrates (62.50%) ranked highest. Statistical analysis indicated no significant differences across constraint categories ($p > 0.05$), suggesting that challenges are interrelated and collectively influence farmers' adoption behavior. Path analysis further revealed that personal constraints exerted the strongest negative effect on adoption, followed by economic and situational constraints. The study concludes that improving adoption of dairy innovations requires a holistic approach that integrates technical training, economic support, and stress management mechanisms. Policy interventions focusing on fodder availability, input subsidies, and capacity-building programs are essential to strengthen the sustainability and profitability of dairy farming in the region.

Keywords *: dairy farmers, economic constraints, personal constraints, situational constraints*

INTRODUCTION

In the field of Animal husbandry India has a lot of promise. Livestock plays a pivotal role in the economy of India. India has been the largest milk producing country in the world with about 221.1 million metric tonnes of milk production during 2021-22 (Rajput et al., 2023).It plays an important role in the socio-economic development of Jammu and Kashmir. The livestock contribution to GDP on a national level is 4.11 per cent while as in J&K livestock sector contributes 5.04 % to its GDP. Livestock sector contribution to agricultural GDP in the UT is a healthy 33 per cent. The annual milk production of J&K is 2526 thousand metric tonnes and the per capita availability of milk in J&K is also more than the national average. The per capita availability of milk on a national level is 337 gram per person per day while as in J&K the same is 554 grams per person per day. In Jammu and Kashmir district Pulwama is the largest producer of milk. The annual milk production in the district during the year 2017-18 has been recorded 284 thousand tonnes, the highest in J&K amounting to an annual revenue generation of around 261 crores. (Anonymous, 2019).Agriculture and Animal husbandry have a symbiotic relationship, in which the agricultural sector provides feed and fodder for the livestock and animals provide milk, meat, manure and draught power for various agricultural operations. Milk is a wholesome food among all the animal products. It contains in proper proportions the various essential food ingredients required by human body in easily digestible form. Inclusion of milk in the human diet increases the digestibility of other types of food as well (Mahammad et al., 2021; Chaudhary; Mahammad et al., 2022). Dairying is recognized as an instrument for social and economic development.

OBJECTIVES

(1) To identify and analyze the constraints perceived by dairy farmers in adopting improved dairy practices

(2) To examine the relationship between situational, personal, and economic constraints and their effect on the adoption of improved dairy technologies

METHODOLOGY

The present research was conducted in Baramulla district of Jammu and Kashmir, which was purposively selected due to its significant dairy farming activity and potential for dairy-based livelihood enhancement. The

study adopted a descriptive research design to identify and analyze the constraints perceived by dairy farmers in adopting improved dairy practices. A multistage sampling procedure was used for the selection of respondents. In the first stage, out of six veterinary blocks in the district, three blocks—Sopore, Baramulla, and Pattan—were purposively chosen based on the highest number of registered dairy farmers. In the second stage, ten villages (Binner, Kalampora, Darpora, Arampora, Seelo, Nowpora, Ninglee, Mamoosa, Wanigam, and Bouchoo) were selected from these blocks using random sampling technique. In the final stage, a total of 120 dairy farmers were selected proportionately to the size of the dairy farmer population in each village. Primary data were collected using a pre-tested and well-structured interview schedule designed to capture the farmers' perceptions of situational, personal, and economic constraints. The interview schedule included both open-ended and close-ended questions to ensure comprehensive data coverage. Data collection was carried out through personal interviews by the researcher with the assistance of local veterinary extension personnel. The collected data were analyzed using descriptive statistical tools such as frequency, percentage, mean, and ranking, while inferential tests such as the independent samples t-test were employed to compare the perceived constraint levels across different categories. Path analysis was further conducted to identify direct and indirect relationships between constraint types and the level of adoption of improved dairy practices.

RESULTS AND DISCUSSION

Table 1: Constraints perceived by the dairy farmers regarding improved dairy practices (n=120)

Sr. No.	Constraints	Frequency	Percentage	Rank
A	**Situational Constraints**			
1	Risk and uncertainty	35	29.16	III
2	Shortage of green fodder in winter	84	70.00	I
3	Low milk production by local cows	57	47.50	II
4	Lack of support from family members to participate in activities of dairy enterprise	20	16.66	IV
B	**Personal Constraints**			
1	Excessive stress due to dual responsibility	96	80.00	I
2	Illiteracy	55	45.83	II
C	**Economic Constraints**			
1	Difficulty in getting loans	65	54.16	II
2	High cost of concentrates	75	62.5	I
3	High charges of emergency veterinary services	52	43.33	III

Situational constraints

Table 1 depicted that situational constraints, majority of dairy farmers experienced constraint of shortage of green fodder in winter (70.00%) ranking at number 1, low milk production by local cows (47.50%) ranking at number 2, risk and uncertainty (29.16%) ranking at number 3 and lack of support from family members to participate in activities of dairy enterprise (16.66%) ranking at number 4.

Personal constraints

Table 1 revealed that among personal constraints 80.00 per cent of dairy farmers faced the constraint of excessive stress due to dual responsibility ranked at number 1. Illiteracy was another personal constraint among 45.83 per cent of the dairy farmers ranked at number 2.

Economic constraints

Table 1 further reveals that among economic constraints 62.50 per cent of dairy farmers faced the constraint of high cost of concentrates ranked at number 1. Difficulty in getting loans was another constraint faced by 54.16 per cent of dairy farmers ranked at number 2. High charges of emergency veterinary services was another economic constraint faced by 43.33 per cent dairy farmers ranked at number 3.

Table 2 revealed that the independent samples t-test revealed no statistically significant differences among situational, personal, and economic constraints ($p > 0.05$). This indicates that dairy farmers in the study area perceived constraints across different categories at relatively similar levels, with personal constraints showing slightly higher mean values compared to situational and economic ones.

Table 2 : Independent samples t-test results for constraints perceived by dairy farmers (n=120)

Constraint Comparison	N (Group 1 / Group 2)	Mean (Group 1 / Group 2)	Std. Deviation (Group 1 / Group 2)	t-value	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of Difference
Situational vs. Personal (AB)	5 / 5	43.20 / 68.60	27.38 / 17.79	-1.740	8	0.120	-25.40	-59.07 – 8.27
Situational vs. Economic (AC)	4 / 3	49.00 / 64.00	27.85 / 11.53	-0.863	5	0.428	-15.00	-59.70 – 29.70
Personal vs. Economic (BC)	2 / 3	75.50 / 64.00	28.99 / 11.53	0.656	3	0.559	11.50	-44.29 – 67.29

The t-test results (Table 1) revealed no significant differences among situational, personal, and economic constraints ($p > 0.05$). However, personal constraints showed comparatively higher mean scores, indicating that farmers experienced greater stress and literacy-related issues than economic or situational challenges. The findings suggest that constraints are interlinked and should be addressed holistically through capacity building, financial support, and fodder management interventions.

Table 3: Path analysis of independent variables of constraints perceived by dairy farmers (n=120)

Path	Path Coefficients	Standard error	Type
Situational v/s Adoption	-0.25	0.089	Direct Negative
Personal v/s Adoption	-0.35	0.086	Direct Negative
Economic v/s Adoption	-0.20	0.090	Direct Negative
Economic v/s Personal	+0.40	0.084	Positive (higher economic issues with higher personal stress
Situational v/s Economic	+0.30	0.088	Positive (situational problems with economic issues)

The above Table-3 depicts that the personal constraint has the strongest direct negative effect on adoption. Economic constraints affect adoption both directly and indirectly through personal stress. Situational constraints mostly work indirectly, increasing economic and personal burdens.

The overall findings of the present study corroborate earlier research across different regions. Studies by Matre et al. (2020); Puja et al. (2022); Parmar et al. (2025); Rajput et al. (2025); Kumawat et al. (2025) and Yadav et al. (2024) identified fodder scarcity and high input costs as major constraints. Similarly, Kharwadkar (2012) and Yadav et al. (2014) reported stress and illiteracy as key personal limitations, particularly among women dairy farmers. The insignificant difference among constraint categories, as revealed by the t-test, is consistent with Rajput et al. (2023) and Kumaran & Anand (2016), who emphasized that socio-economic and personal challenges are often interlinked. Furthermore, the path analysis findings align with Chaudary et al. (2024), Puja et al. (2022), and Yadav et al. (2014); Pandey et al. (2024); Chaudhary; Mahammad et al. (2021); Chaudhary; Mahammad et al. (2022) indicating that personal and economic constraints have the most direct negative influence on adoption. Together, these results confirm that effective interventions must be holistic—addressing not only financial and technical gaps but also stress management, training, and support systems for sustainable dairy development.

CONCLUSION

The study concludes that dairy farmers in Baramulla district of Jammu and Kashmir face a complex set of interrelated situational, personal, and economic constraints that collectively limit the adoption of improved dairy practices. Among these, personal constraints—particularly excessive stress arising from dual responsibilities—emerged as the most critical barrier, followed by the shortage of green fodder during winter and the high cost of concentrates. These

findings highlight that the constraints are not isolated but mutually reinforcing, underscoring the need for integrated and multi-dimensional interventions. Given the growing global demand for milk—estimated to increase by nearly 15 million tonnes annually, largely in developing countries like India—there is substantial potential to enhance adoption through strategic policy support, capacity building, and resource management. Targeted interventions such as regular training programs, demonstration of improved technologies, timely supply of quality fodder, affordable veterinary services, and financial assistance can significantly improve farmers' technical efficiency and motivation levels.

Addressing these challenges through a combination of institutional support, extension outreach, and farmer-centric approaches will not only promote greater adoption of improved dairy practices but also ensure long-term productivity, profitability, and sustainability of the dairy sector in the region. Strengthening the extension framework to provide continuous guidance, stress management support, and input delivery systems can further contribute to the overall socio-economic upliftment of rural dairy farming communities in Jammu and Kashmir.

RECOMMENDATIONS

(1) Government and extension agencies should conduct seasonal fodder management trainings.

(2) Input subsidies for concentrates and emergency veterinary services should be considered.

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CONFLICT OF INTEREST

No conflict of interest

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